REMARKS

In the Final Office Action claims 1-14 were rejected. By the present Response, claims 1, 3, 7, 10, and 12 have been amended. Upon entry of the amendments, claims 1-14 will remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Objections to Specification

The Specification was objected to for not showing in FIG. 1 upper ribs 140 of cooling apparatus 100 disposed over the anode 220. The Specification has been amended accordingly to overcome the objection.

Rejections Under 35 U.S.C. § 112

In the Office Action, claims 1-14 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. All the claims referred to under these rejections have been amended to address the issues raised by the Examiner. In view of the amendments, Applicants respectfully request withdrawal of the claim rejections under 35 U.S.C. § 112.

Rejections Under 35 U.S.C. § 103

Claims 1, 2, 5-9, 13 and 14 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Jones et al. (U.S. Patent No. 5,998,054, hereinafter "Jones") in view of Kusunoki (U.S. Patent No. 5,789,094, hereinafter "Kusunoki").

Independent claims 1 and 7

Jones and Kusunoki do not teach parallel upper and lower channels or a parallel flow of a fluid from an upper channel through lower channel.

The Examiner, on page 4 of the Final Office Action, agreed that Jones does not teach upper channels and lower channels in a parallel arrangement. The Examiner then referred to Kusunoki for this teaching, stating that:

> Kusunoki teaches fuel cells having ***oxidant gas flow and fuel gas flow*** (that) may have a cross flow in the electrode planes with the electrolyte matrix between, but a parallel flow type which supply the ***oxidant gas and the fuel gas in the same direction*** and a counter flow type which supply them from an opposite sides respectively can have the same effect. (Emphasis added).
>
> Page 5 of the Final Office Action.

Applicants would differentiate between the "parallel flow fuel cells" discussed by Kusunoki and the parallel flow of ***a fluid*** *from upper channels through lower channels* as recited in the pending independent claims. In conventional parallel flow fuel cells, the focus is on the parallel flow of *oxidant and fuel gas*. That does not imply "parallel channels" or flow of a fluid in parallel channels. Parallel flow fuel cells involve simultaneous or same direction flow of oxidant and fuel gas as highlighted by the Examiner. However, Applicants' invention addresses the cooling requirement of the fuel cell components and the increase in heat transfer rate, and focuses on a cooling ***fluid flowing in the parallel upper and lower channels***.

Thus, the pending claims focus on the flow of a fluid in two parallel channels for effective cooling, in contrast to flow of two fluids in any conventional parallel flow fuel cell.

Therefore, Applicants respectfully submit that the independent claims 1 and 7 are allowable over the applied references under 35 U.S.C. §103 (a), and the dependent claims are similarly allowable.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully requests allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: 11/9/2006

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